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Application No. 10/803,197
Reply to Office Action of April 19, 2007

Docket No.: 215407-106334

AMENDMENTS TO THE CLAIMS

1. (Original) A self-venting drain valve for draining a contaminant liquid from a filter housing of a filter assembly, said filter housing having a valve receiving bore through which said liquid may drain and gas may simultaneously enter said filter housing, said valve comprising:

an integral valve body for selectively permitting and preventing draining said contaminant liquid from said filter housing through said bore;

said valve body having a substantially tubular stem portion positioned in said valve receiving bore within said filter housing, said tubular stem portion including a substantially tubular wall member defining an internal passageway and having at least one drain hole therethrough and at least one air vent opening therethrough both adapted to fluidly communicate said internal passageway to ambient air;

said valve body being selectively positionable within said bore between a closed position wherein said at least one drain hole is sealed for preventing the liquid and air movement through said bore and an open position wherein said at least one drain hole is unsealed and said at least one air vent opening is partially open to said ambient air for allowing both liquid and air movement along said internal passageway within said tubular stem portion of said valve body.

2. (Original) The self-venting drain valve as defined in claim 1, wherein said integral valve body further includes a knob portion positioned outside said filter housing and juxtaposed to a lower end of said valve stem portion, said knob portion provided for manually manipulating said self-venting drain valve.

3. (Original) The self-venting drain valve as defined in claim 2, wherein said knob portion of said valve body is provided with a drain reservoir to assist the drainage of said liquid from said filter housing by accumulating said draining liquid exiting said at least one drain hole in said stem portion of said valve body to maintain a constant liquid head and controlled flow resistance.

4. (Original) The self-venting drain valve as defined in claim 3, wherein said drain reservoir is substantially annular in shape.

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5. (Original) The self-venting drain valve as defined in claim 3, wherein said door knob portion further including a drain spout adapted to assist the drainage of said liquid from said drain reservoir and allow a user to connect a hose to drain said liquid without spillage.
6. (Original) The self-venting drain valve as defined in claim 2, wherein an outer peripheral surface of said knob portion further including a wrench socket adapted to receive a wrench for rotatably driving said valve body between said closed position and said open position.
7. (Original) The self-venting drain valve as defined in claim 2, wherein said valve body including said tubular stem portion and said knob portion is homogenously formed as a one-piece unitary member.
8. (Original) The self-venting drain valve as defined in claim 7, wherein said valve body is made of a plastic material.
9. (Original) The self-venting drain valve as defined in claim 8, wherein said valve body is manufactured by an injection molding process.
10. (Original) The self-venting drain valve as defined in claim 1, wherein an upper portion of said at least one air vent opening remains within said filter housing while said valve body is in said open position.
11. (Original) The self-venting drain valve as defined in claim 1, wherein said at least one air vent opening is disposed above said at least one drain hole.
12. (Original) The self-venting drain valve as defined in claim 1, including two air vent openings formed through tubular wall member of said valve body and two opposite drain holes formed therethrough.
13. (Original) The self-venting drain valve as defined in claim 1, wherein a lower end of said tubular wall member comprises external threads that threadedly secure said valve body in said closed position.

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said valve body having a tubular stem portion positioned in said valve receiving bore within said filter housing and a knob portion positioned outside said filter housing and juxtaposed to a lower end of said valve stem portion for manually manipulating said self-venting drain valve;

said tubular stem portion including a substantially tubular wall member defining an internal passageway and having two opposite drain holes therethrough formed in a lower end thereof, two opposite cantilever snap arms formed in an upper end of said tubular wall member and two opposite air vent openings therethrough defined by axially extending spaces provided between said tubular wall member and said snap arms, said drain holes and said air vent openings adapted to fluidly communicate said internal passageway to an ambient air, said air vent openings are disposed above said drain holes;

said knob portion of said valve body is provided with a substantially annular drain reservoir to assist the drainage of said liquid from said filter housing by accumulating said liquid exiting said drain holes in said stem portion of said valve body to maintain a constant liquid head and controlled flow resistance and a drain spout adapted to assist the drainage of said liquid from said drain reservoir and allow a user to connect a hose to drain said liquid without spillage;

said valve body being selectively positionable within said bore between a closed position wherein said drain holes are sealed for preventing said liquid and air movement through said bore and an open position wherein said drain holes are unsealed and said at least one air vent opening is partially open to said ambient air for following both liquid and air movement along said internal passageway within said tubular stem portion of said valve body;

a lower end of said tubular wall member comprises external threads adapted to engage said threaded valve receiving bore for securing said valve body in said closed position;

said cantilever snap arms are adapted to engage said threaded valve receiving bore for retaining said valve body in said open position;

an outer peripheral surface of said knob portion further including a wrench socket adapted to receive a wrench for rotatably driving said valve body between said closed position and said open position;

wherein said valve body including said tubular stem portion and said knob portion is homogeneously formed as a single piece unitary member of a plastic material by an injection molding process.

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14. (Original) The self-venting drain valve as defined in claim 13, wherein said valve receiving bore comprises internal threads adapted to engage said external threads on said lower ends of said wall member to hold said valve body in said closed positions.

15. (Original) The self-venting drain valve as defined in claim 1, wherein an upper end of said tubular wall member comprises at least one cantilever snap arm adapted to engage said valve receiving bore for retaining said valve body in said open position.

16. (Original) The self-venting drain valve as defined in claim 15, wherein said at least one air vent opening is defined by an axially extending space provided between said tubular wall member and said snap arm.

17. (Original) The self-venting drain valve as defined in claim 16, wherein said axially extending space defining said at least one air vent opening is open to a top edge of said wall member of said stem portion of said valve body.

18. (Original) The self-venting drain valve as defined in claim 1, further comprising a gasket positioned around said lower end of said valve stem portion to seal said internal passageway when said drain valve is in said closed position.

19. (Original) The self-venting drain valve as defined in claim 2, wherein a generally cylindrical outer peripheral surface of said knob portion is provided with axially oriented ribs to facilitate manual gripping of said knob portion of said valve body.

20. (Original) A self-venting drain valve for draining a contaminant liquid from a filter housing of a filter assembly, said filter housing having an internally threaded valve receiving bore through which said liquid may drain and gas may simultaneously enter said filter housing, said valve comprising:

an integral valve body for selectively permitting and preventing draining said contaminant liquid from said filter housing through said bore;

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21. (New) A self-venting drain valve for draining a contaminant liquid from a filter housing of a filter assembly, said filter housing having a valve receiving bore through which said liquid may drain and gas may simultaneously enter said filter housing, said valve comprising:
an integral valve body for selectively permitting and preventing draining said
contaminant liquid from said filter housing through said bore;

said valve body having a substantially tubular stem portion positioned in said valve
receiving bore within said filter housing, said tubular stem portion including a substantially
tubular wall member defining an internal passageway and having at least one drain hole
therethrough and at least one air vent opening therethrough both adapted to fluidly communicate
said internal passageway to an ambient air;

said valve body being selectively positionable within said bore between a closed position
wherein said at least one drain hole is sealed for preventing the liquid and air movement through
said bore and an open position wherein said at least one drain hole is unsealed and said at least
one air vent opening is open to said ambient air for following both liquid and air movement
along said internal passageway within said tubular stem portion of said valve body.